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# New Taxa, Names, and Combinations in *Saxifraga* (Saxifragaceae) for the *Flora of China*

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**ABSTRACT.** The following new species, new variety, new name, and four new combinations are published for the forthcoming account of *Saxifraga* L. in the *Flora of China*, Volume 8: *S. epiphylla* Gornall & H. Ohba, sp. nov., *S. gemmigera* Engler var. *gemmauligera* (Engler) J. T. Pan & Gornall, comb. nov., *S. heterotricha* Marquand & Airy-Shaw var. *anadena* (H. Smith) J. T. Pan & Gornall, comb. et stat. nov., *S. hypericoides* Franchet var. *aurantiascens* (Engler & Irmscher) J. T. Pan & Gornall, comb. nov., *S. hypericoides* var. *rockii* (Mattfeld) J. T. Pan & Gornall, comb. et stat. nov., *S. sinomontana* J. T. Pan & Gornall, nom. nov., and *S. sinomontana* var. *amabilis* H. Smith ex J. T. Pan, var. nov. In addition, the names *S. mengtzeana* Engler & Irmscher and *S. mengtzeana* var. *cordatifolia* Engler & Irmscher are lectotypified here.

The following new species, new variety, new name, and four new combinations are required for the forthcoming account of *Saxifraga* L. (Pan et al., in press) in the *Flora of China*, Volume 8.

***Saxifraga epiphylla*** Gornall & H. Ohba, sp. nov.

TYPE: China. Yunnan: Malipo Xian, "Panchia-chu," 1500–1700 m, 31 Oct. 1947, K. M. Feng 12638 (holotype, A).

Species haec a *Saxifraga mengtzeana* Engler & Irmscher differt sinu basalium foliorum embryonibus foliaceis instructis.

*Saxifraga epiphylla* and *S. mengtzeana* Engler & Irmscher (1913: 36) are similar species sharing the following features: stolons absent; stem usually simple; basal leaf blades ovate, rarely reniform, hairy and spotted at least abaxially, base cordate; cauline leaves few, lanceolate to ovate; flowers zygomorphic, disc obscure; filaments clavate. However, *S.*

*epiphylla* differs from *S. mengtzeana* chiefly in that it produces a foliar embryo in the sinus of the basal leaf blades. The new species also has basal leaf blades glandular hispid on both surfaces, whereas *S. mengtzeana* has blades glabrous adaxially.

In Pan (1992: 74–75, pl. 14), the name *Saxifraga aculeata* I. B. Balfour (1916: 70) was misapplied to the species here described as *S. epiphylla*. However, the holotype of *S. aculeata*, A. Henry 10316B (E), which lacks foliar embryos, is also an isosynonym of *S. mengtzeana* var. *cordatifolia* Engler & Irmscher (1913: 37), a taxon that we regard as synonymous with *S. mengtzeana* var. *mengtzeana* (see below). Indeed, there is no reference to foliar embryos in any of the protologues. The taxon with foliar embryos therefore constitutes a new species, which we here formally describe as *S. epiphylla*, the epithet referring to the position of foliar embryos.

In their protologue for *Saxifraga mengtzeana*, Engler and Irmscher divided the species into two varieties: var. *cordatifolia* and var. *peltifolia* Engler & Irmscher (1913: 37). They did not cite an autonym, such as a variety "typica," which was their usual procedure, e.g., in their monograph of *Saxifraga* (Engler & Irmscher, 1916, 1919). Three specimens were cited under *S. mengtzeana*: two under variety *cordatifolia* (A. Henry 10316 and A. Henry 10316B, syntypes both at B) and the third under variety *peltifolia* (A. Henry 9118, holotype at B). No specimens were cited under the species before the two varieties. We regard variety *cordatifolia* as constituting the type variety (autonym) because it is cited first in sequence (as "1. Var. *cordatifolia*"). In the accounts of polymorphic species in their monograph of the genus, Engler and Irmscher (1916, 1919) almost invariably treated the type variety first, usually as "var.  $\alpha$ . *typica*." We can infer

that in this particular case the authors wanted to make a nomenclatural contrast between the common plant, with ovate-cordate leaves, and the less common variant, with peltate leaves. To clarify this taxonomic ambiguity, we are lectotypifying both *S. mengtzeana* and its variety *cordatifolia* on the same specimen. The three specimens at B have not been seen and are probably destroyed. Given this, we here designate as the lectotype of *S. mengtzeana* and *S. mengtzeana* var. *cordatifolia* an extant isosyntype, *Henry 10316B* (E). This specimen is also the holotype of the later name *S. aculeata*, which now becomes a nomenclatural synonym of *S. mengtzeana* and a superfluous name. However, *S. aculeata* remains legitimate because it was not nomenclaturally superfluous when first published (*Saint Louis Code*, Art. 52 Note 2, Greuter et al., 2000).

Finally, it is worth pointing out that the holotype of *Saxifraga mengtzeana* var. *peltifolia* (*A. Henry 9118*, at B) is (or was) part of the same gathering as the holotype (at E) of *S. henryi* I. B. Balfour (1916: 72). To our knowledge there are no problems surrounding the application of these names, other than the question of whether the peltate-leaved variant is worth recognizing as distinct from *S. mengtzeana*.

***Saxifraga gemmigera* Engler var. *gemmauligera*** (Engler) J. T. Pan & Gornall, comb. nov. Basionym: *Saxifraga unguiculata* Engler var. *gemmauligera* Engler, in Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 29: 116. 1883. TYPE: China. Gansu: "in jugo septentrionem versus a flumine Tetung, altissima regione alpina," 1872, *N. M. Przewalski* (syntype, LE not seen; isosyntype, B not seen, ?destroyed); "in regione alpina pr. alpem Dshachar-dsargyn," 3500–3800 m, 1880, *N. M. Przewalski* (syntype, LE not seen; isosyntype, B not seen, ?destroyed).

Engler and Irmscher (1916: 141, 150–151) distinguished *Saxifraga gemmigera* from *S. gemmauligera* (Engler) Engler & Irmscher on the grounds that the former, which occurs in Shaanxi Province, has linear cauline leaves, whereas the latter, which occurs in Gansu, Qinghai, and Sichuan provinces, has oblong to subovate-oblong, median and distal cauline leaves. Although this is true, the variation is such that we can find no discontinuity worthy of specific separation. We therefore propose to treat the taxa as varieties, representing the two ends of a morphological continuum.

Engler and Irmscher (1912: 601) commented on the identity of the two syntypes of *Saxifraga unguiculata* var. *gemmauligera* at LE. They explicitly

identified as *S. gemmauligera* the Przewalski specimen of 1872 (which they dated as July and numbered as 221) and as *S. unguiculata* sensu stricto the Przewalski specimen of 1880 (which they dated as June and numbered as 360). Formal lectotypification will have to await study of both syntypes at LE.

It should be noted that the name *Saxifraga gemmifera* Persoon (Syn. Pl. 1: 490. 1805), whose epithet some might think is sufficiently similar to *S. gemmigera* as to constitute an earlier homonym under Article 53.3 of the *Saint Louis Code* (Greuter et al., 2000), is invalid under Article 34.1(c) (i.e., it was published as a synonym) and consequently has no nomenclatural status.

***Saxifraga heterotricha* Marquand & Airy-Shaw** var. ***anadena*** (H. Smith) J. T. Pan & Gornall, comb. et stat. nov. Basionym: *Saxifraga anadena* H. Smith, Bull. Brit. Mus. (Nat. Hist.), Bot. 2: 258, f. 17e–h. 1960. TYPE: China. Xizang: "Kongbo [Gongbo], Ba La, Pasum Chu," 4350 m, 29 June 1947, *Ludlow, Sherriff & Elliot 14033a* (holotype, BM; isotype, A).

This taxon is identical to *Saxifraga heterotricha* in every way except that the stem and cauline leaf margin have eglandular rather than glandular hairs.

***Saxifraga hypericoides* Franchet var. *aurantiascens*** (Engler & Irmscher) J. T. Pan & Gornall, comb. nov. Basionym: *Saxifraga macrostigma* Franchet var. *aurantiascens* Engler & Irmscher, Notes Roy. Bot. Gard. Edinburgh 5: 132. 1912. TYPE: China. Yunnan: "eastern flank of the Lichiang [Lijiang] Range. Lat. 27° 20' N. Alt. 10,500–11,000 ft.," Sep. 1906, *G. Forrest 2947* (syntype, E; isosyntype K); same locality but "Lat. 27° 30' N. Alt. 14–15,000 ft.," July 1910, *G. Forrest 6221A* [mixed with *S. aristulata* var. *longipila* (Engler & Irmscher) J. T. Pan] (syntype, E; isosyntypes, BM, E); same locality but "Lat. 27° 35' N. Alt. 14,000 ft.," Sep 1910, *G. Forrest 6636B* (syntype, E).

The variety *aurantiascens* agrees in its vegetative morphology with *Saxifraga hypericoides* rather than with *S. aristulata* (including *S. macrostigma*), particularly in having adaxially pubescent leaves (rather than glabrous ones as in *S. aristulata*). *Saxifraga hypericoides* var. *aurantiascens* is distinguished from variety *hypericoides* chiefly in having a solitary flower.

***Saxifraga hypericoides* Franchet var. *rockii*** (Mattfeld) J. T. Pan & Gornall, comb. et stat. nov. Basionym: *Saxifraga rockii* Mattfeld, Notizbl. Bot. Gart. Berlin-Dahlem 11: 302. 1931, non *S. rockii* Irmscher, Notes Roy. Bot. Gard. Edinburgh 18: 267. 1935 [= *Saxifraga eglandulosa* Engler]. TYPE: China. Sichuan: "Mount Konka [Gongga Shan], Risonquemba, Konkaling," 4400 m, June–Aug. 1928, *J. F. Rock 16872* (holotype, B not seen, ?destroyed; isotypes, E, GH, K).

Rock's plant differs from variety *hypericoides* in having petals that are rounded or cuneate at the base, rather than cordate at the base.

***Saxifraga sinomontana* J. T. Pan & Gornall, nom. nov.** Replaced synonym: *Saxifraga montana* H. Smith, Acta Horti Gothob. 1: 9, f. 2e, f, t. 6 [upper 2 plants]. 1924, non *S. montana* (Small) Fedde, Just's Bot. Jahresber. 33(1): 613. 1906 [based on *Micranthes montana* Small, in Small & Rydberg, N. Amer. Fl. 22: 138. 1905]. TYPE: China. Sichuan: "Mountains E of Matang," ca. 4800 m, s.d., *H. Smith 4414* (lectotype designated by Ohba et al. (1995: 230), UPS not seen; isolectotype, BM).

This new name is needed because *Saxifraga montana* H. Smith is a later homonym of *S. montana* (Small) Fedde, a validly published combination based on *Micranthes montana* Small, described from California, U.S.A. We are grateful to James L. Zarucchi (MO) for drawing this problem to our attention and for suggesting the replacement name, which we think is most apposite.

***Saxifraga sinomontana* J. T. Pan & Gornall var. *amabilis*** H. Smith ex J. T. Pan, var. nov. TYPE: China. Sichuan: "Taofu distr. [Dawu Xian], montes orient.: Lhamo Mondeh La, in rupibus calcareis, 4500–4700 m," 21 Sep. 1934, *H. Smith 12278* (holotype, BM).

Varietas haec a var. *sinomontana* differt paginis foliorum basaliu pilis rufescentibus crispulis instructis.

This variety differs from the polymorphic *Saxifraga sinomontana* var. *sinomontana* in having crisped, rufous, eglandular hairs on the adaxial surface of the basal leaves. This taxon was recognized at the rank of species by Smith (in sched., *H. Smith 11262* and *H. Smith 12278*, both at BM), but the name was never published.

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